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SEWAGE FACILITIES CONSTRUCTION REPORT 1971

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SEWAGE FACILITIES CONSTRUCTION REPORT 1971

OFFICE OF WATER PLANNING AND STANDARDS

MONITORING AND DATA SUPPORT DIVISION
WATER QUALITY ANALYSIS BRANCH
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Introduction

The annual Sewage Facilities Construction Report is prepared from contract award notifications for sewage facilities construction and related fields. EPA collects these notifications from the F.W. Dodge Corporation daily reports on contracts awarded for construction of sewage facilities, from construction news periodicals such as the "Daily Pacific Builder" and the "Northwest Construction News," and from the States. Over 35,000 contract award notifications were examined for this year's report, most of them (95 percent) from the F.W. Dodge Corporation reports.

Summary

This Sewage Facilities Construction Report presents the data concerning all contracts awarded in the United States for constructing sewage facilities during 1971. Previous reports in this series cover the years 1952 through 1970. The 1971 data show that:

- Contract awards for sewage treatment facilities and collecting sewers in the 19 years from 1952 through 1971 total 18.6 billion dollars.
- The rate of growth in spending for sewage facilities construction has significantly exceeded the rate of inflation and the population growth rate. The annual per capita contract awards measured in constant dollars increased 78 percent from 1957 to 1971.
- Per capita sewage facilities construction awards are generally higher in the densely populated areas of the country such as the Northeast and the Great Lakes regions.
- Federal participation in the form of EPA construction grants, has increased dramatically in the last 2 years—from 14 percent of total contract awards in 1969 to 55 percent in 1971.

Basic Statistics

Contract awards for sewage facilities construction in 1971 totalled 2.127 billion dollars (Table 1). Of this total, 1.307 billion dollars or 61 percent went for treatment facilities, 655 million dollars or 31 percent for collecting sewers, and the remainder, 165 million dollars, went for combination projects where the breakdown in costs between the other two categories was not specified. If the costs of the combination projects were allocated on a pro-rated basis, the figures would be 1.453 billion dollars for treatment facilities and 674 million for collecting sewers.

The treatment facilities category, which accounts for 61 percent of the total spending (Figure 1), includes new plants (treatment plants, stabilization and oxidation ponds, lagoons, leaching systems, etc.), additions and/or replacements to existing plants, and an "other" classification which includes intercepting sewers, outfalls, pumping stations, and various combinations.

The collecting sewers category includes lateral sewers, trunk sewers, extension force mains, lift stations on collecting or trunk lines, and combined sewers whose contract award is under $20,000. Storm sewers are not included. In cases where combined collecting and storm sewers were part of the same contract and the costs could not be separated, one half of the contract award was assigned to the collecting sewers category.

More detailed data within these categories are presented in Appendix A.

National Trends

Annual contract awards for sewage facilities construction have increased steadily since 1957 both on a total and on a per capita basis, even when corrected for inflation. Since 1957 the total yearly expenditures in constant dollars (1957–1959 base) have more than doubled from 616 million to 1.312 billion. Over the same period, per capita expenditures in constant dollars have risen from $3.57 to $6.37, an increase of 78 percent (Table 2).

The rate of increase in contract awards is higher over the last 5 or 6 years than it was previously (Figure 2). One way to highlight this trend is to take 5 year averages of the data for the last 15 years. This approach reduces the distorting effect that year-to-year fluctuations can produce. Table 3 shows that the growth in per capita awards using constant dollars was 55 percent from the 1962–1966 period to the 1967–1971 period, as compared to a 13 percent growth from the 1957–1961 period to the 1962–1966 period.

Trends by Basin

The same 5 year averaging procedure is used to show the trends in per capita awards for treatment facilities in each of the 18 U.S. drainage basins. Table 4 shows year-by-year figures while Table 5 shows the 5 year averages. The Northeast basin, the Upper Mississippi basin, the Western Great Lakes basin have increased their expenditures much more rapidly than the country as a whole. The 1967–1971 average (Table 5) again shows the Western Great Lakes basin and the Northeast basin having the highest per capita awards over the last 5 years while the Western Gulf basin had the lowest.

Awards by State

The State of New York had the highest total awards for 1971 ($378 million) and the highest awards for each of the two major categories, treatment facilities ($301 million) and collecting sewers ($74 million). Connecticut had the highest total per capita awards ($34.78) and the highest per capita awards for treatment facilities ($25.23), while Delaware had the highest per capita awards for collecting sewers ($10.23) (Table 6).

Figures 3 and 4 show the significant degree of correlation between population density and per capita awards for sewage facilities construction by state. The correlation probably exists because more heavily populated areas generally have a higher percentage of the population and a greater number of industries using sewage facilities.

Awards by Basin

The per capita awards for each of the 18 U.S. drainage basins tend to confirm the correlation of high population density with high per capita spending on sewage facilities (Table 7). With the exception of Alaska, an area with special technical problems, the basins with highest per capita awards are the Western Great Lakes basin ($20.71 per person in 1971) and the Northeast basin ($14.53). The major basins with the lowest per capita awards are the Colorado River Basin ($1.84) and the Great Basin in Utah and Nevada ($3.19).

Federal Participation

The large increase in total spending over the last 2 years is mostly due to an increase in Federal grants. EPA grant obligations increased from 214 million dollars in 1969 to 1.168 billion dollars in 1971 (Figure 5). These figures imply that over those 2 years there was a net decrease in state and local spending on sewage facilities construction. Before 1969, EPA spending as a percentage of total spending was in the range of 7 percent to 14 percent. In 1971, the EPA percentage was 55 percent.

TABLE 1—Annual Contract Awards—1952–1971

(Millions of dollars)

Year	Sewage treatment		Collecting sewers		Total	
	Current	1957–1959	Current	1957–1959	Current	1957–1959
1952	137	178	225	296	362	474
1953	187	231	286	353	473	584
1954	229	276	244	294	473	570
1955	201	232	301	345	502	577
1956	354	385	305	331	659	716
1957	351	362	247	254	598	616
1958	389	385	310	310	699	695
1959	349	336	336	320	685	656
1960	359	339	359	339	718	678
1961	449	419	380	352	829	771
Total	3,005	3,143	2,993	3,194	5,998	6,337

Year	Sewage treatment		Collecting sewers		Total	
	Current	1957–1959	Current	1957–1959	Current	1957–1959
1962	545	505	320	291	865	796
1963	679	612	405	358	1,084	970
1964	514	459	396	244	910	803
1965	522	458	356	304	878	762
1966	553	489	399	330	952	799
1967	597	497	448	360	1,045	857
1968	867	694	582	449	1,449	1,143
1969	825	611	684	492	1,509	1,103
1970	1,085	755	738	493	1,823	1,248
1971	1,453	909	674	403	2,127	1,312
Total	7,640	5,989	5,002	3,724	12,642	9,793

NOTES:

1. Constant dollars on a 1957–1959 base were computed as follows: Sewers from PHS Sewer Construction Cost Index (PHS Publication 1132); sewage treatment from PHS Sewage Treatment Plant Construction Cost Index (PHS Publication 1069).

2. The Public Health Service sewage treatment data prior to 1957 are composed of identified contracts only. Beginning with 1957 the figures include an amount apportioned to sewage treatment works from the "combination" contracts.

3. Data on collecting sewers prior to 1957 are obtained by subtracting Public Health Service sewage treatment data from the U.S. Department of Commerce sewer data which includes sanitary and storm sewage systems as well as sewage treatment works. Beginning with 1957 the data for collecting sewers were assembled by the Public Health Service and do not include storm sewers.

TABLE 2—Contract Award Trends, 1957–71

	1957	1958	1959	1960	1961	1962	1963	1964
Total number of awards [1]	3,521	4,208	4,320	4,542	4,733	4,794	5,307	5,301
Total award dollars (millions)	598	699	685	718	829	865	1,084	910
Total award dollars (millions, 1957–1959 base)	616	695	656	678	771	796	970	803
Award dollars per capita	3.47	3.99	3.84	3.96	4.50	4.67	5.73	4.73
Award dollars per capita (1957–1959 base)	3.57	3.97	3.68	3.74	4.19	4.25	5.13	4.17
Sewage treatment award dollars (millions)	351	389	349	359	449	545	679	514
New plant award dollars (millions) [2]	130	128	95	97	101	117	216	144
Collecting sewers award dollars (millions)	247	310	336	359	380	320	405	396
Federal grant obligations (millions)	50	46	47	46	46	80	90	90
Federal grants, percentage of total	8	7	7	6	6	9	8	10

	1965	1966	1967	1968	1969	1970	1971	Total
Total number of awards [1]	5,211	5,202	5,278	5,622	6,258	5,140	5,210	74,647
Total award dollars (millions)	878	952	1,045	1,449	1,509	1,823	2,127	16,171
Total award dollars (millions, 1957–1959 base)	762	799	857	1,143	1,103	1,248	1,312	13,209
Award dollars per capita	4.52	4.85	5.25	7.20	7.43	8.89	10.33	
Award dollars per capita (1957–1959 base)	3.92	4.07	4.31	5.68	5.43	6.09	6.37	
Sewage treatment award dollars (millions)	522	553	597	867	825	1,085	1,453	
New plant award dollars (millions) [2]	125	145	133	194	234	277	364	
Collecting sewers award dollars (millions)	356	399	448	582	684	738	674	
Federal grant obligations (millions)	88	121	150	203	214	438	1,168	
Federal grants, percentage of total [2]	10	13	14	14	14	24	55	

[1] Excludes combination contracts for 1957–1968.

[2] Included in "Sewage Treatment Award Dollars" above.

FIGURE 1—Contract Award Categories, 1971
(Share of award dollars)

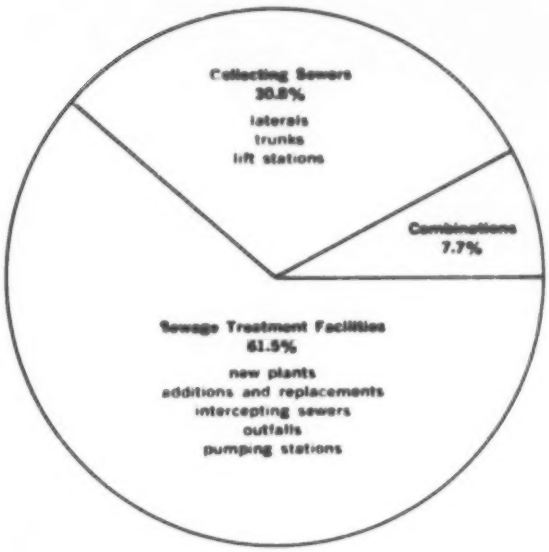

TABLE 3—Contract Awards for Three 5-Year Periods, 1957–71

	1957–1961	1962–1966	1967–1971
Award dollars (millions)	706	938	1591
Percentage change from previous period		33%	70%
Award dollars (millions, 1957–1959 base)	683	826	1361
Percentage change from previous period		21%	65%
U.S. population (millions)	178	191	203
Percentage change from previous period		7%	6%
Per capita award dollars	3.97	4.91	7.84
Percentage change from previous period		24%	60%
Per capita award dollars (1957–1959 base)	3.84	4.32	6.70
Percentage change from previous period		13%	55%

FIGURE 2—Annual Contract Awards, 1952–71

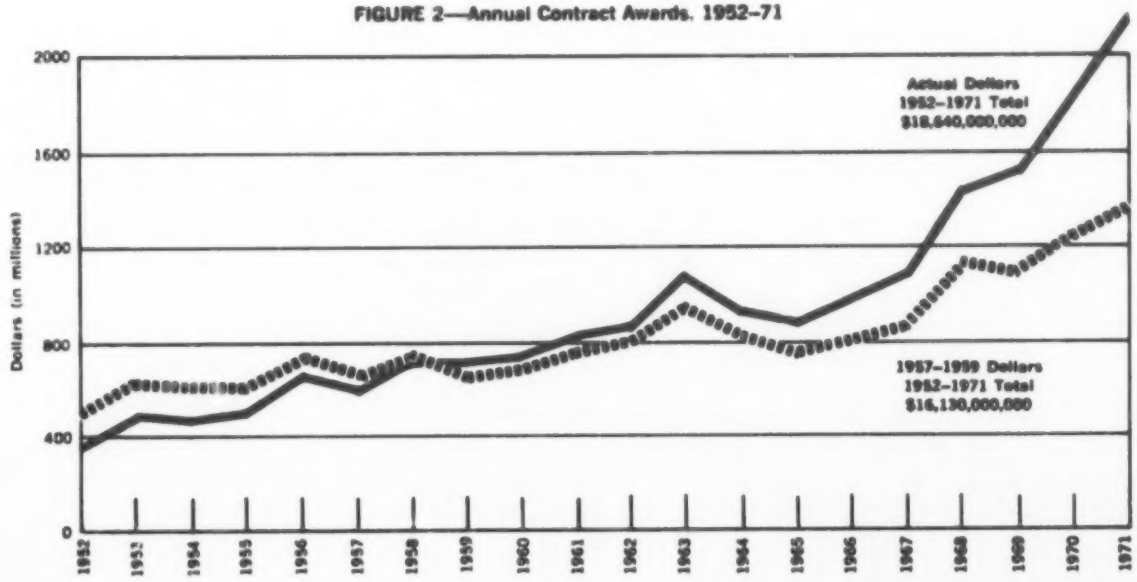

TABLE 4—Contract Awards by Basin, 1957–71 [1]

Basin	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	Total
Northeast	10	35	20	23	14	38	60	37	66	66	81	182	266	280	476	1,224
North Atlantic	59	63	50	70	68	77	116	87	48	58	99	100	59	109	94	1,157
Southeast	22	31	35	32	30	35	57	53	56	47	60	76	69	73	118	786
Tennessee River	4	7	6	6	5	3	6	11	11	6	9	14	11	10	10	119
Ohio River	56	57	62	47	60	55	58	48	56	41	46	87	38	62	117	888
Lake Erie	14	7	7	9	10	5	12	11	14	10	17	20	26	26	35	223
Upper Mississippi	36	37	47	28	28	42	85	40	67	74	75	85	79	104	128	955
Western Great Lakes	14	22	22	21	28	74	34	30	24	42	16	47	80	129	163	746
Missouri River	11	14	13	17	28	22	22	41	26	32	19	36	19	12	16	328
Southwest-Lower Mississippi	16	23	14	18	18	4	48	28	15	28	29	30	33	35	36	375
Colorado River	4	4	3	4	3	16	12	7	6	6	6	6	15	6	<1	98
Western Gulf	9	18	9	16	11	30	19	21	22	18	18	23	28	31	22	295
Pacific Northwest	8	11	9	9	17	51	39	20	27	22	19	17	15	16	48	328
California	50	28	25	23	55	2	18	15	28	54	36	39	31	58	88	550
Great Basin	8	2	3	5	3	<1	7	6	4	8	12	6	2	4	3	73
Alaska	—	—	—	1	2	6	<1	1	1	<1	<1	4	—	8	3	26
Hawaii	—	—	1	2	1	3	8	5	3	5	4	3	5	<1	—	40
Total	328	359	326	331	381	463	595	461	474	517	546	775	776	963	1,367	8,802

[1] Facilities construction only.

TABLE 5—Contract Awards by Basin for Three 5-Year Periods, 1957–71

Major drainage basin [1]	1957–1961		1963–1966		1967–1971	
	Awards	Per capita	Awards	Per capita	Awards	Per capita
Northeast	20	0.56	53	1.38	247	6.05
North Atlantic	62	3.76	77	4.35	92	4.90
Southeast	30	1.38	60	2.59	106	4.29
Tennessee River	6	2.14	7	2.41	11	3.55
Ohio River	56	3.18	52	2.77	70	3.50
Lake Erie	9	1.10	10	1.14	25	2.69
Upper Mississippi	17	1.07	62	3.63	94	5.16
Western Great Lakes	21	1.93	41	3.53	87	7.02
Missouri River	19	5.14	33	8.25	23	5.48
Southwest-Lower Mississippi River	18	1.71	37	3.27	33	2.75
Colorado River	4	2.00	9	4.29	7	3.04
Western Gulf	14	1.46	22	2.16	24	2.20
Pacific Northwest	11	2.0	32	5.42	23	3.85
California	38	3.28	29	2.34	50	3.79
Great Basin	4	3.64	5	4.17	5	3.85
Total	329	1.85	529	2.77	897	4.62

[1] Alaska, Hawaii, and U.S. territories not included since data are not available for entire period.

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FIGURE 3

U.S. POPULATION DENSITY, BY STATE, 1971

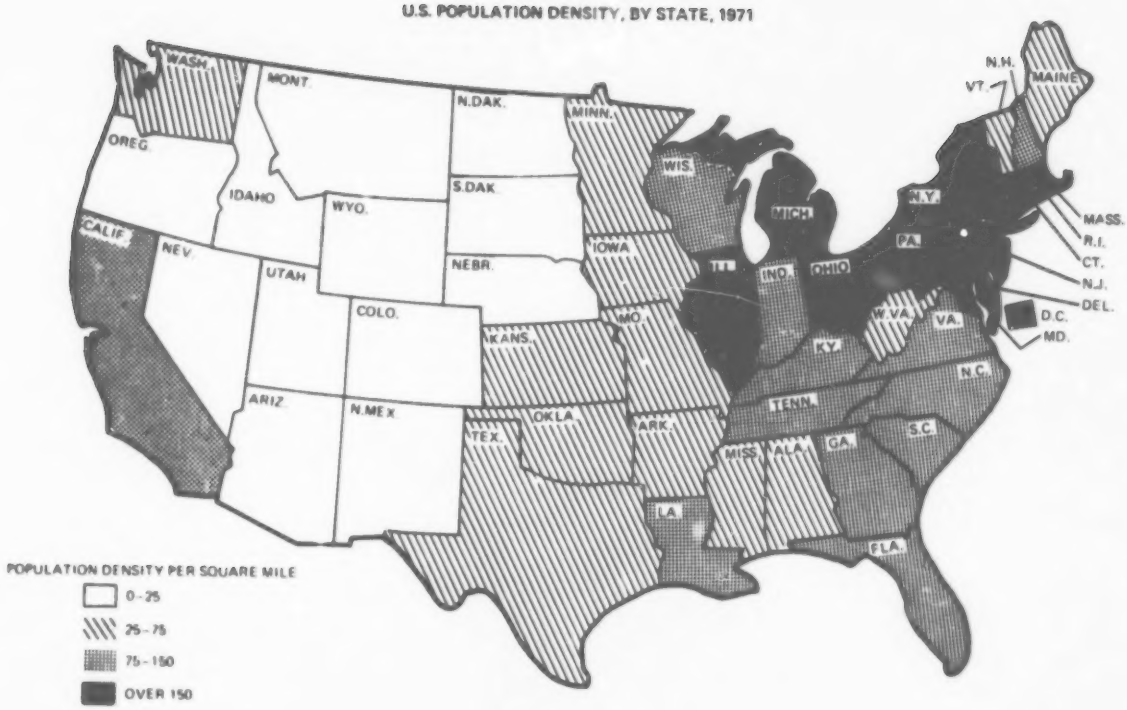


FIGURE 4

PER CAPITA CONTRACT AWARDS, BY STATE, 1971

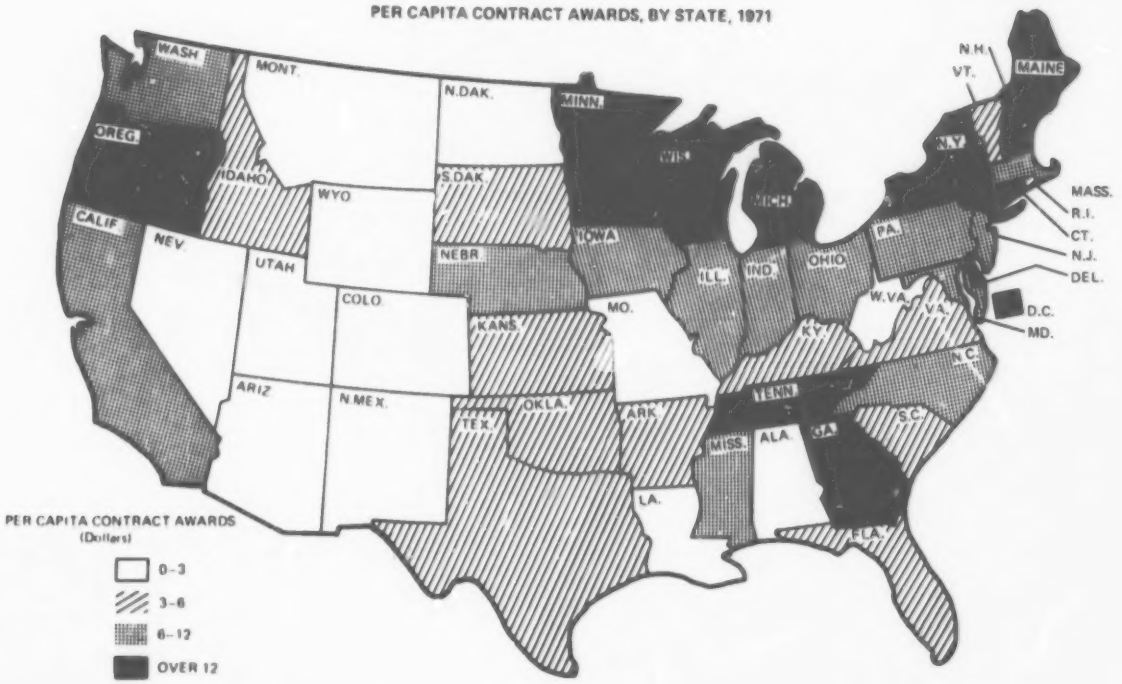


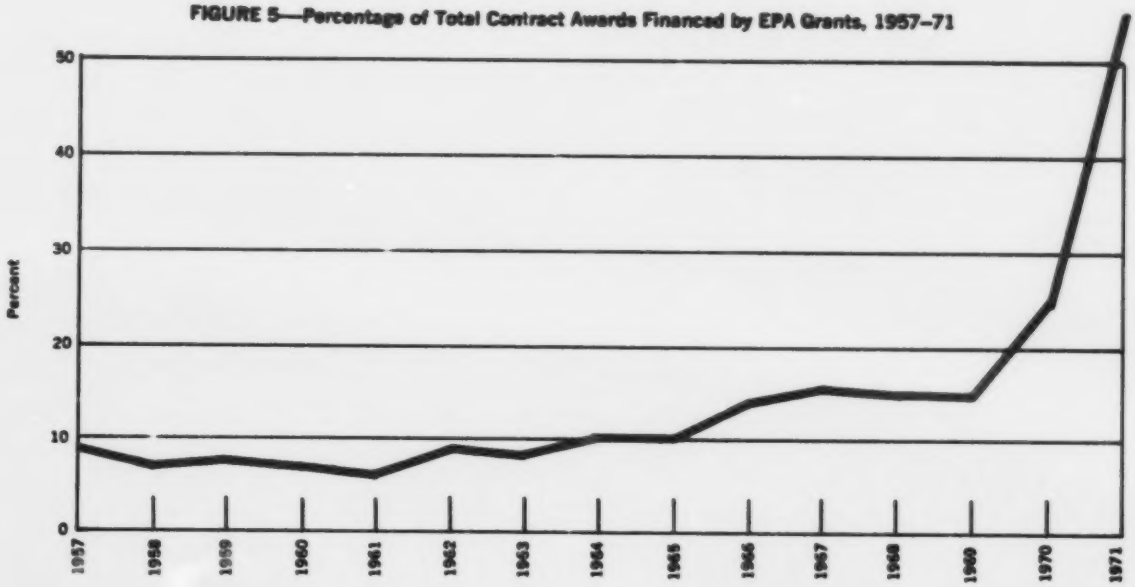
TABLE 6—Contract Awards by State, 1971

State	Total			Sewage treatment			Collecting sewers			Combinations		
	No.	Dollars	Per capita	No.	Dollars	Per capita	No.	Dollars	Per capita	No.	Dollars	Per capita
Alabama	33	8,359,444	2.40	5	3,184,714	0.91	24	3,042,080	0.87	4	2,152,650	0.62
Alaska	28	8,393,568	26.82	5	3,416,861	10.92	18	2,171,739	6.94	5	2,804,968	8.96
Arizona	33	3,366,658	1.88	2	327,601	0.18	31	3,039,057	1.70	0	0	0
Arkansas	33	7,875,893	4.09	10	4,568,298	2.37	15	1,795,533	0.93	8	1,512,062	0.79
California	350	121,079,385	6.06	76	90,466,317	4.52	263	27,241,792	1.36	11	3,371,256	0.18
Colorado	3	518,820	0.23	1	47,570	0.02	1	21,250	0.01	1	450,000	0.20
Connecticut	114	107,167,852	34.78	30	77,747,281	25.23	75	23,266,463	7.55	9	6,154,108	2.00
Delaware	18	12,277,951	22.00	5	5,645,296	10.12	11	5,706,983	10.23	2	925,672	1.65
Dist. of Columbia	3	15,417,971	20.81	1	15,098,000	20.38	2	319,971	0.43	0	0	0
Florida	132	42,083,381	5.98	31	15,719,480	2.23	97	20,819,948	.96	4	5,543,953	0.79
Georgia	112	73,116,706	15.69	41	53,709,217	11.52	52	11,208,219	2.40	19	8,199,270	1.77
Hawaii	0	0	0	0	0	0	0	0	0	0	0	0
Idaho	20	3,123,169	4.27	10	2,176,362	2.97	10	946,807	1.29	0	0	0
Illinois	223	126,954,138	11.34	73	94,206,512	8.41	136	22,936,565	2.05	14	9,811,061	0.88
Indiana	133	56,341,866	10.69	38	40,391,824	7.66	88	12,919,070	2.45	7	3,030,972	0.58
Iowa	135	19,864,221	6.97	25	10,121,466	3.55	93	7,606,094	2.67	17	2,136,661	0.75
Kansas	103	10,534,217	4.66	16	1,676,805	0.74	77	8,027,779	3.56	10	829,633	0.36
Kentucky	56	16,547,091	5.05	12	6,361,612	1.94	36	5,129,172	1 56	8	5,056,307	1.55
Louisiana	82	10,808,608	2.94	8	853,743	0.23	67	4,990,579	1.36	7	4,964,286	1.35
Maine	41	22,587,441	22.52	18	17,639,427	17.59	20	3,546,504	3.54	3	1,401,510	1.39
Maryland	392	39,971,987	9.99	26	11,562,421	2.89	356	23,082,215	5.77	10	5,327,351	1.33
Massachusetts	173	59,256,836	10.29	21	28,663,678	4.98	139	26,717,100	4.64	13	3,876,058	0.67
Michigan	309	195,103,445	21.68	50	114,700,742	12.75	225	59,409,358	6.60	34	20,993,345	2.33
Minnesota	248	57,364,781	14.78	26	20,572,848	5.30	213	32,800,021	8.45	9	3,991,912	1.03
Mississippi	43	26,689,464	11.99	8	20,065,773	9.01	21	1,825,907	0.82	14	4,797,784	2.16
Missouri	122	13,485,611	2.84	22	4,647,897	0.98	93	7,355,768	1.55	7	1,481,946	0.31
Montana	8	1,769,158	2.50	1	283,324	0.40	5	1,020,582	1.44	2	465,252	0.66
Nebraska	95	20,877,802	13.81	18	13,372,520	8.84	67	4,250,308	2.81	10	3,254,974	2.16
Nevada	4	165,258	0.33	0	0	0	4	165,258	0.33	0	0	0
New Hampshire	24	10,381,029	13.62	9	8,006,665	10.51	11	1,431,620	1.88	4	942,744	1.23
New Jersey	159	51,046,499	6.99	20	15,834,421	2.17	135	33,865,958	4.64	4	1,346,110	0.18
New Mexico	19	2,989,657	2.90	3	274,267	0.27	12	2,099,069	2.04	4	616,321	0.59
New York	273	378,221,948	20.71	62	300,764,139	16.47	202	73,604,678	4.03	9	3,853,131	0.21
North Carolina	109	33,687,403	6.54	36	21,714,398	4.22	59	7,454,242	1.45	9	4,518,765	0.87
North Dakota	34	1,218,673	1.94	1	13,785	0.02	28	938,73'	1.50	5	268,157	0.42
Ohio	293	118,621,128	11.00	62	71,439,336	6.63	226	42,173,394	3.91	5	5,007,798	0.46
Oklahoma	62	13,211,661	5.06	15	7,782,395	2.98	42	4,791,339	1.84	5	637,927	0.24
Oregon	95	32,252,914	14.95	21	26,105,264	12.10	68	4,844,369	2.15	6	1,503,281	0.70
Pennsylvania	336	128,356,747	10.86	58	52,307,368	4.43	266	59,325,786	5.02	12	16,723,593	1.41
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0
Rhode Island	15	5,257,533	5.48	2	555,131	0.58	12	2,880,460	3.00	1	1,821,942	1.90
South Carolina	28	15,056,142	5.73	7	9,076,824	3.46	19	4,739,074	1.80	2	1,240,244	0.47
South Dakota	26	2,149,626	3.21	4	239,284	0.36	17	954,696	1.43	5	955,646	1.42
Tennessee	78	52,900,295	13.26	17	27,628,948	6.92	53	17,449,123	4.37	8	7,822,226	1.97
Texas	319	80,611,362	5.29	75	23,007,010	2.01	233	33,039,798	2.88	11	4,564,554	0.40
Utah	0	0	0	0	0	0	0	0	0	0	0	0
Vermont	10	2,075,451	4.52	1	525,522	1.15	8	1,345,622	2.94	1	204,307	0.43
Virginia	95	26,300,199	5.58	24	18,648,549	3.96	67	6,012,702	1.28	4	1,638,948	0.34
Washington	98	29,682,399	8.60	21	19,627,163	5.69	71	7,448,431	2.16	6	2,606,805	0.75
West Virginia	17	4,792,647	2.74	4	4,174,221	2.38	11	353,209	0.20	2	265,217	0.16
Wisconsin	429	77,223,619	17.24	75	42,624,380	9.52	334	29,096,784	6.50	20	5,502,455	1.22
Wyoming	1	28,216	0.08	1	28,216	0.08	0	0	0	0	0	0
Total	5,561	2,127,167,850	10.34	1,097	1,307,585,471	6.35	4,113	655,009,217	3.19	351	164,573,162	0.80

TABLE 7—Contract Awards by Basin–1971

Drainage basin	Total			Sewage treatment			Collecting sewers			Combinations		
	No.	Dollars	Per capita	No.	Dollars	Per capita	No.	Dollars	Per capita	No.	Dollars	Per capita
Northeast	752	603,032,883	14.53	157	425,703,544	10.26	558	158,301,598	3.81	43	18,997,741	0.46
North Atlantic	770	195,703,807	10.25	101	93,683,060	4.91	644	82,283,894	4.31	25	19,726,863	1.03
Southeast	438	189,088,621	7.50	126	118,304,470	4.69	270	49,084,394	1.95	42	21,699,757	0.86
Tennessee River	46	29,733,824	9.29	10	9,708,286	3.03	30	15,005,319	4.69	6	5,020,219	1.57
Ohio River	482	191,577,932	9.39	126	116,773,300	5.72	330	53,306,190	2.61	26	21,498,442	1.06
Lake Erie	146	67,858,970	7.14	24	35,172,541	3.70	120	31,823,761	3.35	2	862,668	0.09
Upper Mississippi	760	220,031,911	11.89	161	127,855,844	6.91	553	72,720,984	3.93	46	19,455,103	1.05
Western Great Lakes	605	260,892,958	20.71	87	163,393,182	12.97	474	74,950,150	5.95	44	22,549,626	1.79
Missouri	285	41,170,402	9.57	47	16,456,334	3.83	204	18,361,098	4.27	34	6,352,970	1.47
Southwest-Lower Mississippi	325	71,111,717	5.83	58	36,452,952	2.99	224	18,388,661	1.51	43	16,270,104	1.33
Colorado River	42	4,227,499	1.84	3	375,171	0.16	37	3,297,268	1.44	2	555,060	0.24
Western Gulf	317	58,147,750	5.24	70	21,904,820	1.97	238	35,067,131	3.16	9	1,175,799	0.11
Pacific Northwest	216	65,218,346	10.19	52	47,909,789	7.49	151	13,076,971	2.04	13	4,232,586	0.66
California	335	116,857,785	8.72	73	87,770,694	6.55	252	25,869,776	1.93	10	3,217,315	0.24
Great Basin	14	4,149,877	3.19	3	2,695,623	2.07	10	1,300,313	1.00	1	153,941	0.12
Alaska	28	8,393,568	26.82	5	3,416,861	10.92	18	2,171,739	6.94	5	2,804,968	8.96
Hawaii	0	0	0	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0
Total	5,581	2,127,167,850	10.34	1,097	1,387,585,471	6.35	4,113	655,699,217	3.18	351	164,573,162	0.80

FIGURE 5—Percentage of Total Contract Awards Financed by EPA Grants, 1957–71



APPENDIX A

TABLE A–1—Contract Awards, Sewage Treatment Facilities Construction Only, by States, 1971

State	Total		New plants		Additions/Replacements		Other [1]	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Alabama	5	3,184,714	1	2,806,286	0	0	4	558,428
Alaska	5	3,416,861	0	0	2	1,003,295	3	2,413,566
Arizona	2	327,601	0	0	1	46,876	1	280,725
Arkansas	10	4,568,298	5	2,718,714	1	418,940	4	1,430,644
California	76	90,486,317	13	17,306,698	23	43,845,106	40	29,314,513
Canal Zone	0	0	0	0	0	0	0	0
Colorado	1	47,570	1	47,570	0	0	0	0
Connecticut	30	77,747,281	3	11,421,506	11	57,917,908	16	8,377,867
Delaware	5	5,845,296	2	4,746,748	0	0	3	898,548
District of Columbia	1	15,098,000	0	0	1	15,098,000	0	0
Florida	31	15,719,490	9	5,656,554	11	8,650,877	11	1,412,049
Georgia	41	53,709,217	16	9,516,049	9	25,428,702	16	18,764,466
Hawaii	0	0	0	0	0	0	0	0
Idaho	10	2,176,362	2	1,662,497	4	172,803	4	341,262
Illinois	73	94,206,512	16	6,477,721	30	53,221,631	27	34,507,160
Indiana	38	40,391,824	10	4,463,631	21	34,673,343	7	1,254,850
Iowa	25	10,121,466	11	3,848,530	7	5,777,640	7	495,296
Kansas	16	1,676,805	3	686,114	1	4,500	12	986,191
Kentucky	12	6,361,612	5	4,846,540	3	472,265	4	1,042,807
Louisiana	8	853,743	2	580,110	0	0	6	273,633
Maine	18	17,639,427	10	15,414,209	0	0	8	2,225,218
Maryland	26	11,562,421	8	2,998,432	4	4,074,880	14	4,489,109
Massachusetts	21	28,663,678	7	15,333,183	2	2,862,536	12	10,467,959
Michigan	50	114,700,742	7	7,051,737	26	81,801,684	17	25,847,321
Minnesota	26	20,572,848	10	6,599,053	4	4,091,207	12	9,882,588
Mississippi	8	20,065,773	4	17,374,214	0	0	4	2,691,559
Missouri	22	4,647,897	6	1,417,240	3	1,479,116	13	1,751,541
Montana	1	283,324	1	283,324	0	0	0	0
Nebraska	18	13,372,520	9	7,138,079	3	5,018,946	6	1,215,495
Nevada	0	0	0	0	0	0	0	0
New Hampshire	9	8,006,665	1	72,000	0	0	8	7,934,665
New Jersey	20	15,834,421	2	6,367,301	6	1,381,495	12	8,085,625
New Mexico	3	274,267	1	35,893	2	238,374	0	0
New York	62	300,764,139	26	79,109,272	13	64,995,160	23	156,659,707
North Carolina	36	21,714,396	4	3,499,320	7	9,097,243	25	9,117,833
North Dakota	1	13,785	1	13,785	0	0	0	0
Ohio	62	71,439,936	18	24,761,054	36	43,813,039	8	2,865,843
Oklahoma	15	7,782,395	7	4,265,432	5	2,433,709	3	1,083,254
Oregon	21	26,105,264	8	18,352,602	3	1,813,319	10	5,939,343
Pennsylvania	58	52,307,368	23	16,349,640	18	30,518,357	17	5,439,371
Puerto Rico	0	0	0	0	0	0	0	0
Rhode Island	2	555,131	1	212,813	0	0	1	342,318
South Carolina	7	9,076,824	3	1,375,458	2	6,411,267	2	1,290,099
South Dakota	4	239,284	2	150,659	1	60,000	1	28,625
Tennessee	17	27,628,946	8	17,113,643	4	5,779,300	5	2,736,003
Texas	75	23,007,010	28	8,789,225	26	7,057,326	21	7,160,459
Utah	0	0	0	0	0	0	0	0
Vermont	1	525,522	0	0	0	0	1	525,522
Virginia	24	18,648,549	3	5,047,025	6	4,981,909	15	8,619,615
Washington	21	19,627,163	5	7,241,468	8	11 192,794	8	1,192,901
West Virginia	4	4,174,221	3	4,051,095	0	0	1	123,126
Wisconsin	75	42,624,380	24	15,207,183	34	16,586,167	17	10,831,030
Wyoming	1	28,216	0	0	0	0	1	28,216
Total	1,097	1,307,585,471	329	364,209,607	338	552,449,514	430	390,926,350

[1] Intercepting sewers, outfalls, pumping stations, and combinations.

TABLE A–2—Contract Awards, Sewage Treatment Facilities Only, by Basin, 1971

Drainage basin	Total		New plants		Additions/ Replacements		Other [1]		Total per capita
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	Dollars
Northeast	151	425,703,544	46	111,348,554	28	122,667,776	77	191,687,214	10.26
North Atlantic	101	93,693,060	30	35,645,501	27	37,006,671	44	21,040,888	4.91
Southeast	126	118,304,470	35	35,905,075	29	49,588,089	62	32,811,306	4.69
Tennessee River	10	9,708,286	3	1,947,444	3	5,476,033	4	2,284,809	3.03
Ohio River	126	116,773,300	44	44,867,388	53	62,355,789	29	9,550,123	5.72
Lake Erie	24	35,172,541	6	6,114,774	13	28,347,471	5	710,296	3.70
Upper Mississippi	161	127,855,844	48	18,890,729	65	66,772,367	48	42,192,748	6.91
Western Great Lakes	87	163,393,182	20	20,513,776	38	106,636,392	29	36,243,014	12.97
Missouri River	47	16,456,334	20	8,333,998	6	5,236,946	21	2,885,390	3.83
Southwest-Lower Mississippi	58	36,452,952	23	27,755,332	11	3,819,827	24	4,877,793	2.99
Colorado River	3	375,171	1	47,570	1	46,876	1	280,725	.16
Western Gulf	70	21,904,820	25	8,276,201	24	6,468,160	21	7,160,459	1.97
Pacific Northwest	52	47,908,789	15	27,256,567	15	13,178,716	22	7,473,506	7.49
California	73	87,770,694	11	14,692,601	23	43,845,106	39	29,232,987	6.55
Great Basin	3	2,695,623	2	2,614,097	0	0	1	81,526	2.07
Alaska	5	3,416,861	0	0	2	1,003,295	3	2,413,566	10.92
Hawaii	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0	0	0	0
Total	1,097	1,307,585,471	329	364,209,607	338	552,449,514	430	390,926,350	6.35

[1] Intercepting sewers, outfalls, pumping stations, and combinations.

TABLE A–3—Contract Awards, Transit Facilities Only, by State, 1971

State	Total		Intercepting sewers		Outfalls		Intercepting sewers and outfalls		Pumping stations		New plants and other		Additions and/or replacements	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Alabama	4	558,428	2	307,199	2	251,229	0	0	0	0	0	0	0	0
Alaska	3	2,413,566	1	69,915	0	0	0	0	1	1,571,630	0	0	1	772,021
Arizona	1	280,725	0	0	1	280,725	0	0	0	0	0	0	0	0
Arkansas	4	1,430,644	3	1,043,129	1	387,515	0	0	0	0	0	0	0	0
California	40	29,314,513	33	26,014,074	3	2,196,622	0	0	3	880,259	0	0	1	223,558
Canal Zone	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Colorado	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Connecticut	16	8,377,867	11	5,345,474	0	0	0	0	5	3,032,393	0	0	0	0
Delaware	3	898,548	1	147,879	0	0	0	0	2	750,669	0	0	0	0
District of Columbia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Florida	11	1,412,049	1	50,000	1	276,323	0	0	9	1,085,726	0	0	0	0
Georgia	16	18,764,466	8	6,160,512	4	74,275	0	0	0	0	4	12,529,679	0	0
Guam	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hawaii	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Idaho	4	341,262	2	300,273	0	0	0	0	2	40,989	0	0	0	0
Illinois	27	34,507,160	22	29,074,302	3	2,308,046	0	0	1	72,985	1	3,051,827	0	0
Indiana	7	1,254,850	4	841,250	0	0	0	0	3	413,600	0	0	0	0
Iowa	7	495,296	2	135,219	3	247,790	0	0	0	0	2	112,287	0	0
Kansas	12	986,191	7	629,623	2	110,938	0	0	0	0	3	245,630	0	0
Kentucky	4	1,042,807	2	870,500	2	172,307	0	0	0	0	0	0	0	0
Louisiana	6	273,633	1	53,553	0	0	0	0	5	220,080	0	0	0	0
Maine	8	2,225,218	7	2,033,414	0	0	0	0	1	191,804	0	0	0	0
Maryland	14	4,489,109	6	2,014,412	0	0	0	0	7	2,143,097	1	331,600	0	0
Massachusetts	12	10,467,959	8	8,129,465	0	0	0	0	2	285,900	2	2,052,594	0	0
Michigan	17	25,847,321	11	24,983,827	0	0	0	0	6	863,494	0	0	0	0
Minnesota	12	9,882,588	9	8,937,594	0	0	0	0	3	944,994	0	0	0	0
Mississippi	4	2,691,559	3	2,601,298	0	0	0	0	0	0	0	0	1	90,261
Missouri	13	1,751,541	7	1,232,628	2	243,121	0	0	4	275,792	0	0	0	0
Montana	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nebraska	6	1,215,495	0	0	6	1,215,495	0	0	0	0	0	0	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Hampshire	8	7,934,665	5	4,393,873	0	0	0	0	1	112,179	2	3,428,613	0	0
New Jersey	12	8,085,625	4	1,930,929	3	4,211,022	0	0	5	1,943,674	0	0	0	0
New Mexico	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New York	23	156,659,707	16	100,539,705	4	54,352,631	0	0	2	1,648,621	0	0	1	118,750
North Carolina	25	9,117,833	5	1,311,565	13	6,511,204	0	0	6	1,066,464	1	228,600	0	0
North Dakota	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ohio	8	2,865,843	7	2,722,348	0	0	0	0	1	143,495	0	0	0	0
Oklahoma	3	1,083,254	1	874,599	1	185,218	0	0	0	0	1	23,437	0	0
Oregon	10	5,939,343	8	5,589,718	0	0	0	0	1	74,500	1	275,125	0	0
Pennsylvania	17	5,439,371	12	4,126,669	0	0	0	0	5	1,312,702	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rhode Island	1	342,318	1	342,318	0	0	0	0	0	0	0	0	0	0
Samoa	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Carolina	2	1,290,099	0	0	2	1,290,099	0	0	0	0	0	0	0	0
South Dakota	1	28,625	0	0	1	28,625	0	0	0	0	0	0	0	0
Tennessee	5	2,736,003	3	2,508,442	1	202,861	0	0	1	24,700	0	0	0	0
Texas	21	7,160,459	9	4,981,283	8	1,155,704	2	840,847	2	182,625	0	0	0	0
Utah	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vermont	1	525,522	0	0	0	0	0	0	1	525,522	0	0	0	0
Virginia	15	8,619,615	12	7,859,999	2	657,418	0	0	1	102,198	0	0	0	0
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wake Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Washington	8	1,192,901	5	938,751	2	107,125	0	0	1	147,025	0	0	0	0
West Virginia	1	123,126	0	0	0	0	0	0	1	123,126	0	0	0	0
Wisconsin	17	10,831,030	14	10,165,362	1	277,991	0	0	2	87,677	0	0	0	0
Wyoming	1	28,216	0	0	0	0	0	0	0	0	1	28,216	0	0
Total	430	390,926,350	253	269,561,101	68	76,744,284	2	840,847	84	20,267,920	19	22,307,608	4	1,204,590

TABLE A–4—Contract Awards, Transit Facilities Only, by Basin, 1971

Drainage basin	Total		Intercepting sewers		Outfalls		Intercepting sewers and outfalls		Pumping stations		Sewage treatment plants and other		Additions and/or replacements	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Northeast	77	191,687,214	52	122,715,178	6	57,464,431	0	0	14	5,907,648	4	5,481,207	1	118,750
North Atlantic	45	20,740,888	24	13,030,829	3	1,756,640	0	0	16	5,921,819	1	331,600	0	0
Southeast	62	32,447,306	20	9,587,964	21	8,212,612	0	0	15	2,152,190	5	12,758,279	1	90,261
Tennessee River	4	2,284,809	3	2,094,291	1	190,518	0	0	0	0	0	0	0	0
Ohio River	29	9,550,123	20	8,550,743	3	246,262	0	0	6	753,118	0	0	0	0
Lake Erie	5	710,296	4	566,801	0	0	0	0	1	143,495	0	0	0	0
Upper Mississippi	48	42,192,744	33	35,429,613	6	2,507,135	0	0	7	1,171,886	2	3,084,114	0	0
Western Great Lakes	29	36,243,014	21	35,073,929	1	277,981	0	0	7	891,084	0	0	0	0
Missouri River	21	2,885,390	7	1,073,654	8	1,461,987	0	0	3	209,562	3	140,187	0	0
Southwest-Lower Mississippi	24	4,877,793	11	3,534,085	5	886,532	0	0	5	220,090	3	237,086	0	0
Colorado River	1	280,725	0	0	1	280,725	0	0	0	0	0	0	0	0
Western Gulf	21	7,160,459	9	4,981,283	8	1,155,704	2	840,847	2	182,625	0	0	0	0
Pacific Northwest	22	7,473,505	15	6,828,742	2	107,125	0	0	4	262,514	1	275,125	0	0
California	39	29,232,987	32	25,932,548	3	2,196,622	0	0	3	880,258	0	0	1	223,558
Great Basin	1	81,526	1	81,526	0	0	0	0	0	0	0	0	0	0
Alaska	3	2,413,566	1	88,915	0	0	0	0	1	1,571,630	0	0	1	772,021
Hawaii	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	439	390,926,350	253	289,961,101	68	76,744,284	2	840,847	84	20,267,920	19	22,307,688	4	1,294,590

TABLE A–5—Contract Awards, Collecting Sewers Only, by State, 1971

State	Total		Laterals		Trunks		Lift Stations		Combinations [1]	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Alabama	24	3,042,080	16	2,104,776	3	171,070	1	72,938	4	693,296
Alaska	18	2,171,739	15	1,493,801	2	289,938	0	0	1	388,000
Arizona	31	3,039,057	26	2,090,651	5	968,406	0	0	0	0
Arkansas	15	1,795,533	8	462,223	3	323,972	0	0	4	1,009,338
California	263	27,241,792	179	11,312,925	69	10,422,313	2	504,400	13	5,002,154
Colorado	1	21,250	0	0	1	21,250	0	0	0	0
Connecticut	75	23,266,463	53	11,824,744	9	5,731,179	1	847,100	12	4,863,440
Delaware	11	5,706,983	4	931,026	6	4,680,088	0	0	1	95,869
District of Columbia	2	319,971	0	0	2	319,971	0	0	0	0
Florida	97	20,819,948	63	8,597,582	10	1,486,761	5	1,450,278	19	9,285,327
Georgia	52	11,208,219	27	4,360,447	13	3,674,883	2	195,776	10	2,977,113
Hawaii	0	0	0	0	0	0	0	0	0	0
Idaho	10	946,807	7	272,914	2	667,263	1	6,630	0	0
Illinois	136	22,936,565	89	12,943,848	22	2,989,614	2	30,635	23	6,972,468
Indiana	88	12,919,070	45	3,655,192	27	2,578,268	3	1,206,530	13	5,479,080
Iowa	93	7,606,094	67	4,936,002	14	1,495,330	2	165,621	10	1,009,141
Kansas	77	8,027,779	60	5,544,486	8	495,834	0	0	9	1,987,459
Kentucky	36	5,129,172	24	1,913,651	4	580,056	0	0	8	2,635,465
Louisiana	67	4,990,579	45	2,035,402	9	1,840,591	2	32,797	11	1,081,789
Maine	20	3,546,504	12	1,993,606	4	258,716	0	0	4	1,294,182
Maryland	356	23,082,215	301	11,619,622	19	3,082,893	1	191,000	35	8,188,700
Massachusetts	139	26,717,100	64	8,390,773	43	7,603,770	6	545,176	26	10,174,381
Michigan	225	59,409,358	125	21,410,105	26	3,887,777	0	0	74	34,111,476
Minnesota	213	32,800,021	126	11,145,696	34	10,841,203	7	763,067	46	10,050,055
Mississippi	21	1,825,907	15	1,299,212	1	11,655	2	21,734	3	493,306
Missouri	93	7,355,768	72	4,186,507	14	920,933	0	0	7	2,248,328
Montana	5	1,020,582	5	1,020,582	0	0	0	0	0	0
Nebraska	67	4,250,308	55	3,439,893	6	376,733	1	6,875	5	424,807
Nevada	4	165,258	3	87,500	1	77,758	0	0	0	0
New Hampshire	11	1,431,620	8	1,325,434	3	106,186	0	0	0	0
New Jersey	135	33,865,968	91	16,003,772	17	3,990,982	5	1,338,577	22	12,532,637
New Mexico	12	2,099,069	9	1,725,780	2	183,551	0	0	1	189,738
New York	202	73,604,678	140	40,932,112	30	11,836,798	2	700,060	30	20,135,708
North Carolina	59	7,454,242	32	2,454,492	9	1,150,747	2	212,136	16	3,636,867
North Dakota	28	936,731	23	570,352	2	100,590	0	0	3	265,789
Ohio	226	42,173,394	138	16,348,883	52	17,218,482	1	126,300	35	8,479,729
Oklahoma	42	4,791,339	30	3,518,091	7	801,957	3	80,214	2	391,077
Oregon	68	4,644,369	36	1,258,214	15	1,256,376	1	20,000	16	2,109,779
Pennsylvania	266	59,325,786	174	32,965,195	58	11,551,432	12	1,382,533	22	13,426,626
Puerto Rico	0	0	0	0	0	0	0	0	0	0
Rhode Island	12	2,880,460	10	2,749,740	1	74,020	0	0	1	56,700
South Carolina	19	4,739,074	9	981,717	2	149,850	0	0	8	3,607,507
South Dakota	17	954,696	14	552,557	1	48,873	0	0	2	353,266
Tennessee	53	17,449,123	34	8,877,321	7	2,466,722	1	441,300	11	5,663,780
Texas	233	33,039,798	138	16,561,802	53	9,912,110	7	920,812	35	5,645,074
Utah	0	0	0	0	0	0	0	0	0	0
Vermont	8	1,345,622	8	1,345,622	0	0	0	0	0	0
Virginia	67	6,012,702	46	3,767,567	8	1,104,409	4	156,778	9	983,948
Washington	71	7,448,431	47	3,611,169	14	2,350,418	0	0	10	1,486,844
West Virginia	11	353,209	8	270,764	2	57,445	1	25,000	0	0
Wisconsin	334	29,096,784	208	15,886,784	41	3,438,819	13	1,274,695	72	8,496,486
Wyoming	0	0	0	0	0	0	0	0	0	0
Total	4,113	655,009,217	2,709	310,780,534	691	133,582,992	90	12,718,962	633	197,926,729

[1] Includes contracts whose descriptive information covers more than one single category of collecting sewers (e.g., laterals, trunks, and/or lift stations).

TABLE A–6—Contract Awards, Collecting Sewers Only, by Basin, 1971

Drainage Basin	Total		Laterals		Trunks		Lift Stations		Combinations		Total
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars	Per capita
Northeast	558	158,301,588	356	80,425,056	103	28,935,074	11	3,030,849	88	45,910,619	3.81
North Atlantic	644	82,283,284	481	38,924,896	86	18,256,813	12	1,279,749	65	23,822,426	4.31
Southeast	270	48,084,344	156	19,248,683	39	6,833,816	14	2,083,192	61	20,918,703	1.95
Tennessee River	30	15,005,319	16	7,011,930	4	2,281,783	1	441,300	9	5,290,306	4.67
Ohio River	330	53,306,190	218	24,974,580	58	14,212,477	7	472,636	47	13,646,497	2.61
Lake Erie	120	31,823,761	66	11,074,057	28	8,251,433	3	1,593,600	23	10,904,671	3.35
Upper Mississippi	553	72,720,984	362	35,879,804	85	16,542,449	14	1,334,050	92	18,964,681	3.93
Western Great Lakes	474	74,950,150	272	30,423,151	67	7,775,218	9	861,518	126	35,890,263	5.96
Missouri River	204	18,361,098	158	13,045,427	19	1,079,863	2	45,325	25	4,190,483	4.27
Southwest-Lower Mississippi	224	18,386,681	168	11,805,585	29	3,468,891	6	124,901	21	3,191,474	1.51
Colorado River	37	3,297,288	30	2,249,854	7	1,047,414	0	0	0	0	1.43
Western Gulf	238	35,067,131	141	18,002,817	54	9,933,653	7	920,812	36	6,209,849	3.16
Pacific Northwest	151	13,076,971	92	5,179,661	31	4,274,057	2	26,630	26	3,596,623	2.04
California	252	25,889,776	171	10,776,056	68	10,415,853	2	504,400	11	4,173,467	1.93
Great Basin	10	1,300,313	15	465,166	1	6,480	0	0	2	828,687	1.00
Alaska	18	2,171,739	15	1,493,801	2	289,938	0	0	1	385,000	6.94
Hawaii	0	0	0	0	0	0	0	0	0	0	0
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0	0	0	0	0	0
Total	4,113	655,669,217	2,709	316,780,534	681	133,582,992	99	12,718,982	633	197,926,729	3.18

TABLE A–7—Contract Awards, By Population Size Group, 1971

Population size group	Total		Sewage treatment facilities		Collecting sewers		Combinations	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Unknown	84	16,412,396	5	2,923,680	73	11,859,100	6	1,629,616
Under 500	289	51,012,952	72	20,860,405	153	18,566,731	64	11,585,816
500–1,000	331	85,067,038	99	31,144,972	179	37,019,011	53	16,903,055
1,000–2,500	531	130,772,373	156	57,572,460	332	51,726,298	43	21,473,615
2,500–5,000	547	164,849,752	116	66,992,164	391	80,544,034	40	17,313,554
5,000–10,000	593	249,919,596	132	142,310,197	425	83,503,406	36	24,105,993
10,000–25,000	851	341,113,157	168	195,086,189	635	109,985,308	48	36,041,660
25,000–50,000	548	174,527,049	85	110,099,131	441	52,496,720	22	11,931,198
50,000–100,000	387	144,569,272	48	88,735,631	328	49,297,954	11	6,535,687
100,000–250,000	389	288,510,089	77	221,525,429	303	59,369,765	9	7,614,895
over 250,000	1,011	480,414,176	139	370,335,213	853	100,640,890	19	9,438,073
Total	5,561	2,127,167,850	1,097	1,307,585,471	4,113	655,088,217	351	164,573,162

TABLE A–8—Contract Awards, By Size of Contract, 1971

Population size group	Total		Sewage treatment facilities		Collecting sewers		Combinations	
	No.	Dollars	No.	Dollars	No.	Dollars	No.	Dollars
Under 10,000	441	2,681,583	18	88,119	421	2,583,156	2	10,308
10,000–25,000	979	16,232,417	65	1,116,998	901	14,882,591	13	232,828
25,000–50,000	875	31,643,306	96	3,531,006	749	26,982,879	30	1,129,421
50,000–100,000	830	59,368,718	116	8,454,047	675	47,798,075	39	3,116,596
100,000–250,000	971	158,683,238	215	35,934,751	663	106,718,476	93	16,030,011
250,000–500,000	663	240,364,752	194	71,886,259	397	139,740,985	82	28,737,508
500,000–1,000,000	412	282,722,570	146	102,435,197	215	146,156,309	51	34,131,064
1,000,000–5,000,000	335	656,825,718	195	422,684,812	101	163,820,986	39	70,319,920
over 5,000,000	55	678,645,540	52	661,454,282	1	6,325,760	2	10,865,506
Total	5,561	2,127,167,850	1,097	1,307,585,471	4,113	655,088,217	351	164,573,162

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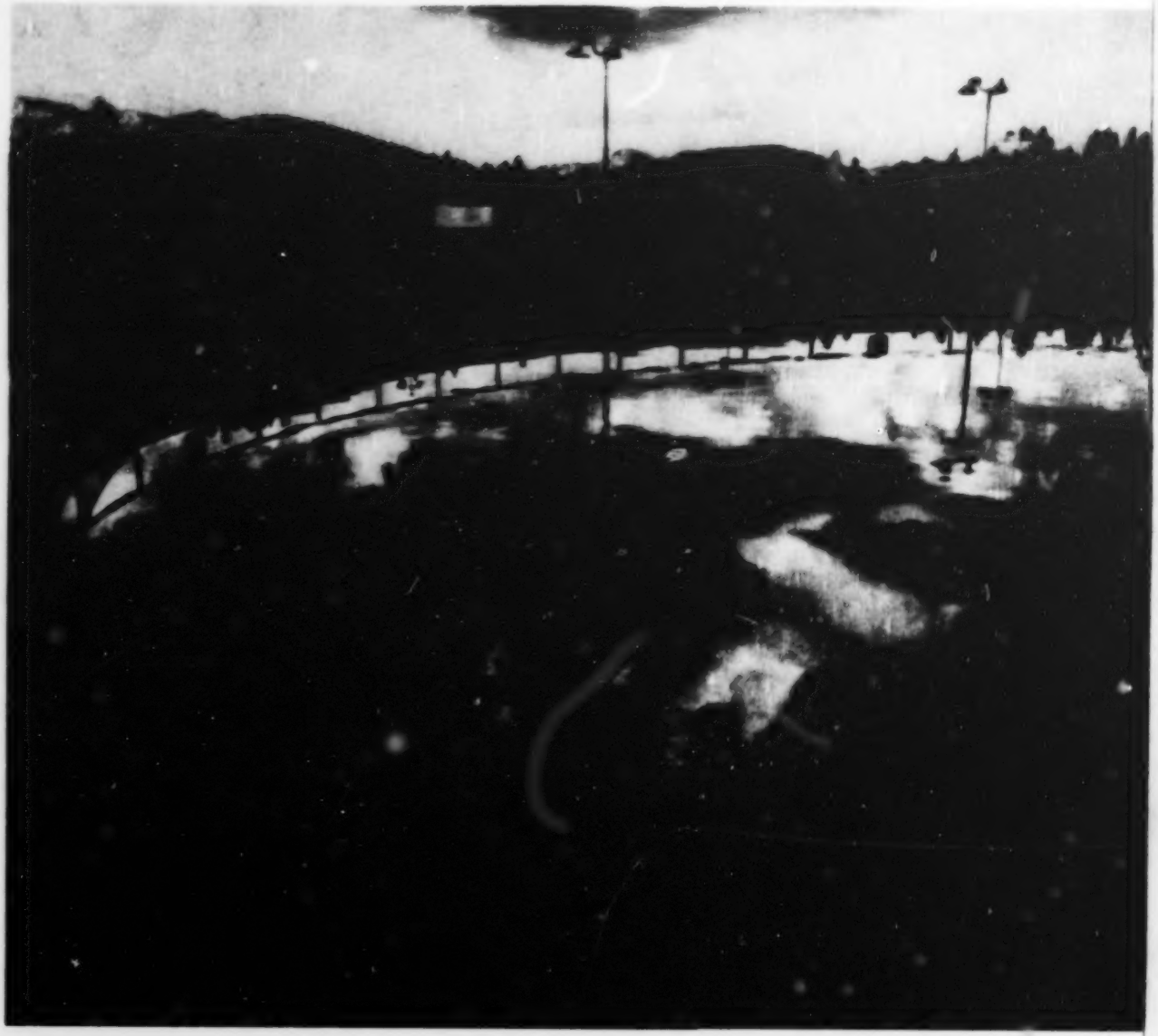

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